



Standard Practice for Determining the Acoustical Performance of Exterior Windows and Doors¹

This standard is issued under the fixed designation E 1425; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice establishes requirements for testing and rating acoustical performance of exterior windows and doors, regardless of their method or materials of manufacture.

1.1.1 Air leakage and operating force are integral elements of acoustical performance of exterior windows and doors; therefore this practice requires concurrent testing of air leakage and operating force in addition to acoustical tests.

1.2 This practice establishes the test methodology and specimen criteria and classification rating system for purposes of determining the acoustical performance levels of exterior windows and doors only, and not through openings between such assemblies and adjacent construction.

1.3 Excluded from the scope of this practice are roof windows, skylights, sloped glazing systems, or any interior window or door assembly.

1.4 The values stated in inch/pound units are to be regarded as standard. The values given in parentheses (SI units) are provided for information only.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

C 634 Terminology Relating to Environmental Acoustics²

E 90 Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions²

E 283 Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen³

E 413 Classification for Rating Sound Insulation²

E 631 Terminology of Building Constructions³

E 1017 Specification for Generic Performance Requirements for Exterior Residential Window Assemblies³

E 1332 Classification for Determination of Outdoor-Indoor Transmission Class²

2.2 Other Standards:

ANSI/BHMA A156.2 Bored and Preassembled Locks and Latches⁴

3. Terminology

3.1 *Definitions*—For definitions of terms used in this practice, refer to Terminologies C 634 and E 631, unless otherwise indicated.

4. Significance and Use

4.1 *Air Leakage Relative to Sound Transmission*—Certain frequencies are more susceptible to sound transmission through cavities or discontinuities in the test specimen; therefore, the air leakage of the test specimen is reported to allow the approving authority information relative to air tightness.

4.2 *Operating Force Relative to Sound Transmission*—The use of specific sealing components to achieve a given sound rating could affect operating force of the vertical or horizontal sliding sash or panels of the assembly; therefore, operating force is reported to allow the approving authority information relative to sash or panel operating forces.

5. Test Specimen

5.1 Assemblies to be tested in accordance with this practice shall be representative of those produced by the manufacturer or fabricator. Test specimens shall be sealed, painted or otherwise finished or prepared only as they would normally be prepared for actual installation and use. Test specimens shall be mounted for testing as specified by each applicable test method.

5.1.1 Test specimens shall not be modified with supplementary adhesives, sealants, tapes, or clamping devices not normally a part of the product.

¹ This practice is under the jurisdiction of ASTM Committee E-6 on Performance of Buildings and is the direct responsibility of Subcommittee E06.51 on Component Performance of Windows, Curtain Walls, and Doors.

Current edition approved Aug. 15, 1991. Published October 1991.

² *Annual Book of ASTM Standards*, Vol 04.06.

³ *Annual Book of ASTM Standards*, Vol 04.11.

⁴ Available from American National Standards Institute, 11 West 42nd Street, 13th Floor, New York, NY 10036.

